Modifying A Boat Trailer

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Part I: Overview of Business

John Deere Ottumwa Works has been in business since 1910 when they bought the Dain Manufacturing Company. They currently make a round baler, large and small square baler, windrower, forage harvester and mower conditioner equipment. Approximately 850 employees make over 10,000 units per year.

Part II: Job Specifics

The key to building anything at John Deere is identifying a need, defining the problem , breaking down the problem into smaller problems to be solved, like the design process the manufacturing processes , the prototype testing and marketing processes. Each new product at John Deere requires new fixture weld tooling. Weld fixtures are constantly redesigned and retooled for a new part. In much the same way students will design and rebuild a modified trailer in metals classes.

Part III: Introduce the Problem

The project is to take an existing boat trailer and design, modify, build and test a kayak trailer that will accommodate 8 kayaks

Part IV: Background

The students in Metals 2 will use the skills learned in Metals 1 to complete the project. These will include sketching, layout, measurement, cutting, grinding,welding preparation, MIG welding, painting, and testing. Some remedial training up of skills taught in Metals 1 may be needed. They will also brainstorm possible solutions.

Part V: Business Solution

Students will brainstorm and research the question. How do you think John Deere would go about solving this problem?
Invite John Deere Engineer to come hear student answers .
John Deere Manufacturing engineer explains how it would be done at John Deere.

Part VI: Student Solutions

I think students will come up with several designs that would complete the project. Students will determine how much different designs cost to build. Can we make it cheaper? Will a cheaper solution compromise strength?